

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: LIPP, Eberhard

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TITLE: MIXING AND REDUCING MACHINE WITH AN UPWARD CONVEYING MIXING
BLADE

Amendment B: CLAIM AMENDMENTS

Claims 1-16 (canceled). These claims were canceled in a previous amendment.

Claims 17-26 (canceled). Please cancel these claims.

27. A mixing and reducing machine comprising:

a housing having an interior volume;

an axle extending vertically within said housing, said axle being rotatably mounted
in said housing;

a mixing spiral means affixed to said axle for conveying product upwardly in said
housing, said mixing spiral means comprising:

a first spiral-shaped mixing blade affixed to said axle in a first position
along a longitudinal axis of said axle and extending radially outwardly therefrom; and

a second spiral-shaped mixing blade affixed to said axle in a second
position along the longitudinal axis of said axle and extending radially outwardly therefrom, said
first position being separated from said second position by a transition zone, said transition zone
being passable directly therethrough from said first position to said second position.

28. The machine of Claim 27, wherein said first spiral-shaped mixing blade comprises a plurality of blade elements being connected and positioned adjacent each other in a circumferential direction; and

wherein said second spiral-shaped mixing blade comprises a plurality of blade elements being connected and positioned adjacent each other in a circumferential direction.

29. The machine of Claim 28, said blade elements of said first spiral-shaped mixing blade and said blade elements of said second spiral-shaped mixing blade having different capacities for axially conveyed quantities.

30. The machine of Claim 28, said blade elements of said first spiral-shaped mixing blade having a helix angle that is different than a helix angle of said blade elements of said second spiral shaped mixing blade.

31. The machine of Claim 28, said blade elements of said first spiral-shaped mixing blade having a blade width that is different than a blade width of said blade elements of said second spiral-shaped mixing blade.

32. The machine of Claim 28, said blade elements of said first spiral-shaped mixing blade having a periphery with a rotational speed that is different than a rotational speed of a periphery of said blade elements of said second spiral-shaped mixing blade.

33. The machine of Claim 28, each of said blade elements of said first and second spiral-shaped mixing blades having a lifting edge on a trailing end thereof bent upwardly in a rotational direction.

34. The machine of Claim 28, wherein said blade elements are arranged essentially one above another and are connected through a blade carrier set in the rotational direction.

35. The machine of Claim 28, wherein said blade elements are attached through carrier arms onto said axle, a front surface thereof being chamfered in sections, increasing radially to said periphery.

36. The machine of Claim 28, further comprising a shearing head affixed to a lower end of said second spiral-shaped mixing blade, said shearing head being aligned with said axle.

37. The machine of Claim 27, said mixing spiral means for rotating said first and second spiral-shaped mixing blades having a counter head for different rotational speeds.

38. The machine of Claim 27, further comprising a shearing head affixed to a lower end of said second spiral-shaped mixing blade, said shearing head being aligned with said axle.

39. A mixing and reducing machine comprising:

- a housing having an interior volume;
- an axle extending vertically within said housing, said axle being rotatably mounted in said housing;
- a mixing spiral means affixed to said axle for conveying product upwardly in said housing, said mixing spiral means comprising:
 - a first spiral-shaped mixing blade affixed to said axle in a first position along a longitudinal axis of said axle and extending radially outwardly therefrom; and
 - a second spiral-shaped mixing blade affixed to said axle in a second position along the longitudinal axis of said axle and extending radially outwardly therefrom, said first position being separated from said second position by a transition zone; and
 - a shearing head affixed to a lower end of said mixing spiral means, said shearing head being aligned with said axle.